

Pranav Minasandra, Ph.D.

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Interests Novel and generally applicable theories of behaviour in animals; methods to explore behavioural dynamics. I am particularly interested in the dynamics of behaviour at the intersection of multiple timescales, and the *behavioural algorithms* used by animals to express individual, collective, and social behaviour.

Experience **Postdoc** | Max Planck Institute of Animal Behaviour, Konstanz, Germany 2024 - now
IMPRS-QBEE Postdoc Awardee.

Ph.D. | Max Planck Institute of Animal Behaviour, Konstanz, Germany 2020 - 2024
Magna cum laude
Thesis: “*Exploring sequences of behaviour across scales and species.*”
Also affiliated to: International Max Planck Research School of Quantitative Behaviour, Ecology, and Evolution; and the University of Konstanz.

M.Sc. | Indian Institute of Science (IISc), Bengaluru, India 2019 - 2020
Master of Science in Biology.
Research at the Centre for Ecological Sciences, IISc.

B.Sc. (Research) | Indian Institute of Science (IISc), Bengaluru, India 2015 - 2019
Major in Biology.
Research at the Centre for Ecological Sciences, IISc.

Publications **Peer-reviewed publications**

1. Gall, G. E., Demartsev, V., **Minasandra, P.**, Baldoni, C., Cain, K. E. & Quinn, J. S. Examining Combinatoricity within the Pūkeko Vocal Repertoire. *Animal Behaviour*. 123431. doi:[10.1016/j.anbehav.2025.123431](https://doi.org/10.1016/j.anbehav.2025.123431) (2026).
2. **Minasandra, P.**, Grout, E. M., Brock, K., Crofoot, M. C., Demartsev, V., Gersick, A. S., Hirsch, B. T., Holekamp, K. E., Johnson-Ulrich, L., Nayak, A., *et al.* Behavioral sequences across multiple animal species in the wild share common structural features. *PNAS* **122**. e2503962122. doi:[10.1073/pnas.2503962122](https://doi.org/10.1073/pnas.2503962122) (2025). [[Press coverage](#)].
3. DeNicola, V., Mezzini, S., Bursac, P., **Minasandra, P.** & Cagnacci, F. Effects of vasectomy on breeding-related movement and activity in free-ranging white-tailed deer. *Movement Ecology*. doi:[10.1186/s40462-025-00554-5](https://doi.org/10.1186/s40462-025-00554-5) (2025).
4. Grout, E. M., Ortega, J., **Minasandra, P.**, Quin, M. J., Crofoot, M. C., Strandburg-Peshkin, A. & Hirsch, B. T. Whole Group Tracking Reveals That Relatedness Drives Consistent Subgrouping Patterns in White-Nosed Coatis. *Animal Behaviour* **216**. 175–193. ISSN: 0003-3472. doi:[10.1016/j.anbehav.2024.08.010](https://doi.org/10.1016/j.anbehav.2024.08.010) (2024).
5. **Minasandra, P.**, Jensen, F. H., Gersick, A. S., Holekamp, K. E., Strauss, E. D. & Strandburg-Peshkin, A. Accelerometer-based predictions of behaviour elucidate factors affecting the daily activity patterns of spotted hyenas. *Royal Society Open Science* **10**. 230750. doi:[10.1098/rsos.230750](https://doi.org/10.1098/rsos.230750) (2023).
6. Kunjar, S., Strandburg-Peshkin, A., Giese, H., **Minasandra, P.**, Sarkar, S., Jolly, M. K. & Gradwohl, N. Link updating strategies influence consensus decisions as a function of the direction of communication. *Royal Society Open Science* **10**. 230215. doi:[10.1098/rsos.230215](https://doi.org/10.1098/rsos.230215).
7. **Minasandra, P.** & Isvaran, K. Truncated power-law distribution of group sizes in antelope. *Behaviour* **157**. 541–558. doi:[10.1163/1568539X-bja10012](https://doi.org/10.1163/1568539X-bja10012) (2020).

Pre-prints and work in-prep

8. **Minasandra, P.** Anticipating others' future behaviours alters collective movement and enhances survival. *bioRxiv* **122**. 2025–08. doi:[10.1101/2025.08.14.670290](https://doi.org/10.1101/2025.08.14.670290) (2025). [pre-print].
9. **Minasandra, P.**, Planas-Sitjà, I., Roche, D. & Sridhar, V. H. TracktorLive: a real-time multi-object tracking and response delivery package. [Software available on [GitHub](#)].
10. **Minasandra, P.**, Demartsev, V., Johnson-Ulrich, L., Manser, M. & Strandburg-Peshkin, A. Spatiotemporal interplay of vigilance, movement, and collective behaviour in groups of meerkats. [Ch. 3 of Dissertation, available [online](#)].
11. Grout, E. M., Hass, C. C., **Minasandra, P.**, Thomas, M., Ashbury, A. M., Ortega, J., Crofoot, M. C., Hirsch, B. T. & Strandburg-Peshkin, A. The vocal repertoire of white-nosed coatis: structural features, temporal dynamics, and social variations. [in review].

Awards and fellowships**ISBE Travel Award**

Registration fees and travel costs to ISBE conference 2026.

2026

Best Paper Award—University of Konstanz

Chosen from among several nominations. [200 €]

2025

Nominated—Schmidt Science Fellows programme

One of ten doctoral graduates nominated by the Germany-wide Max Planck Society.

2024

IMPRS Postdoctoral Award

6 months of pay at the scale of a postdoctoral researcher. [32,350 €]

2024 - 2025

ISBE Travel Award

2500 AUD [≈1,500 €].

2024

DAAD—Graduate Student Scholarship Programme

Nominated after evaluation of my proposal. [≈60,000€]

2020 - 2024

Kishore Vaigyanik Protsahan YojanaGovt. of India scholarship for exceptional undergraduates in science. *All India Rank : 135*

Included stipend and contingency

2015 - 2020

Mentorship**Juee Dhar**Role: Mentor and Thesis Advisory Committee member. *Doctoral thesis*: Sleep social dynamics in baboon groups.**Amlan Nayak**Role: Mentor and primary co-advisor. *Master's thesis*: Spatial variation of vigilance in meerkats.**Ananya Passi**Role: Co-advisor *Summer research*: Mathematical modelling of habitat use and population dynamics.**Talks and posters****[Invited] Talk at Laboratory for the Conservation of Endangered Species***Centre for Cellular and Molecular Biology, Hyderabad*

“Three short stories in animal behaviour”

2025

[Invited] CES Seminar Series*Indian Institute of Science, Bangalore*

“Exploring sequences of behaviour in the wild across scales and species”

2024

International Society of Behavioural Ecology Meeting*Melbourne, Australia*

“Sequences of behaviour show a common statistical structure across species”

2024

Gessellschaft für Primatologie Annual Conference 2024
Konstanz, Germany
“How animals behave: Sequences of behavior show a common statistical structure across species”

Descriptive & Normative Models of Collective Behaviour 2022
School of Mathematics, University of Leeds
“Looking into hyena daily activity patterns using accelerometers”

Animal Behaviour Society - Virtual Seminar 2021 2021
“Behavioural classifier provides insights into spotted hyena behaviour”

Teaching **Introduction to Git**
Instructor and organiser: Biannual workshop offered at the MPI of Animal Behavior.

Introduction to remote code servers like GitHub
Instructor and organiser: Biannual workshop offered at the MPI of Animal Behavior.

L^AT_EX for academic documents
Instructor and organiser: Annual workshop offered at the MPI of Animal Behavior.

Quantitative Ecology: Research Design and Inference 2019
Teaching assistant: Taught coding in R, conducted several classes, graded assignments, managed course website.

Technical skills *Programming languages and related*
Python, Julia, R, Bash, L^AT_EX, and C. HTML, CSS, and git. Familiarity with agentic code generation.

Specialised computational skills
Machine learning; Parallel processing and Inter-Process Communication; Agent-based models; Analysis of complex multivariate time-series data.

Mathematical modelling
Dynamical (PDE) models incorporating spatial and stochastic variables; Probability models; Numerical simulations of all the above.

Other academic services **Reviewing**
Methods in Ecology and Evolution; PLOS One; Integrative and Comparative Biology; Animal Behaviour.

Representation 2024 - 2025
Postdoc representative at the Max Planck Institute of Animal Behaviour.

References **Dr Ariana Strandburg-Peshkin,**
Max Planck Institute of Animal Behavior
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Dr Kavita Isvaran,
Indian Institute of Science
kavita@iisc.ac.in

Dr Andrew Berdahl,
University of Washington
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Prof Meg Crofoot,
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